APRIL/MAY 2025

FACS32/CACS32/BACS32 — STATISTICAL METHODS AND THEIR APPLICATIONS - I

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

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1. Define Descriptive Statistics.
2. What are statistical functions?
3. Define Median in statistics.
4. What is Geometric Median?
5. What is Arithmetic Range? Mention its Range.
6. What is co-efficient of quartile deviation?
7. What is Bowley Skewness?
8. What is kurtosis?

9. What is Karl Pearson's Coefficient of Correlation?

10. Write the Pearson Correlation Coefficient Formula.

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SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write the general rules for diagrams and graphs.

Or

(b) Mention some of the Limitations of Statistical methods.

12. (a) Calculate the mean deviation and mean of the following distribution:

Classes	Frequencies
20-40	3
40-80	6
80-100	20
100-120	12
120-140	9
N =	50

Or

20. Compute the Spearman rank-order correlation on data without any ties using the following data:

Exam	Marks									
Tamil	56	75	45	71	62	64	58	80	76	61
English	66	70	40	60	65	56	59	77	67	63

(b) Find two positive numbers whose Arithmetic Means increased by 2 than Geometric Means and their difference is 12.

13. (a) Find out quartile deviation and coefficient of quartile deviation of the following series. Wages of 9 workers in Rs. are 170, 82, 110, 100, 150, 150, 200, 116, 250.

Or

(b) Calculate the SD using assumed mean as 6 for the sample data 2, 4, 8, 6, 10, 12.

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14. (a) Below is given the IQ scores of 120 students of a class. Calculate the skewness based on Mode.

IQ score	50-60	60-70	70-80	80-90	90-100
No. of std	5	8	10	18	25
IQ score	100-110	110-120	120-130	130-140	
No. of std	21	19	10	4	

Or

(b) Mention some Nature of Skewness and its Characteristics.

15. (a) Calculate the coefficient of rank correlation between Eco. Marks and Statistics marks as given below.

Marks :	80	56	50	48	50	62	60
Students :	90	75	75	65	65	50	65

Or

(b) Determine the Karl Pearson's coefficient of correlation for the following data.

X	28	45	40	38	35	33	40	32	36	33
Y	23	34	33	34	30	26	28	31	36	35

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss briefly with sample diagram about (a) Quartile (b) Deciles.

17. Calculate the mean deviation from the (a) arithmetic mean (b) median (c) mode in respect to the marks obtained by nine students given below and show that the mean deviation from the median is the minimum. Marks (out of 25): 7, 4, 10, 9, 15, 12, 7, 9, 7.

18. Draw the percentile chart for the following data.

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Class Interval	Frequency
10-20	10
20-30	15
30-40	12
40-50	5
50-60	3

19. Compute Bowley's Measure of Skewness from the following data:

Height (in inches)	Number of Persons
58	10
59	18
60	30
61	42
62	35
63	28
64	16
65	08